WHAT IS CLAIMED IS:

1. A technique of treating a medical disorder comprising:

surgically implanting into a patient at least one sensor element capable of detecting and conveying cell signals;

attaching a management unit such that a micro controller of the management unit is connected to at least one sensor element; and

connecting the management unit via a lead bundle to at least one stimulating electrode and at least one treatment device such that a stimulation switch sends one or more current pulses to the at least one stimulating electrode and the at least one treatment device,

wherein the at least one treatment device is a member selected from the group consisting of an electrical stimulation device, a heat transfer device, a magnetic stimulation device and a medication delivery device;

whereby responsive to signals from said at least one sensor element, mathematical algorithms of the management unit perform one or more mathematical analysis comprising quantification of waveform amplitude, slope, curvature, rhythmicity, time-lag or frequency as well as analysis based on wavelets such as wavelet-crosscorrelation analysis and time-lag analysis of cell signals to prompt delivery of electrical stimulation and at least one treatment to cells responsible for the medical disorder.

2. The method according to claim 1 further comprising maintaining charge balance of a current pulse sequence by dynamic feedback.

3. The method according to claim 1, wherein the at least one treatment is a member selected from the group consisting of heat transfer, magnetic stimulation and medication.

4. The method according to claim 1, wherein the at least one sensor element is a member selected from the group consisting of activity sensor elements and temperature sensor elements.

5. The method according to claim 4, wherein the activity sensor elements are selected from the group consisting of electrical sensing elements, chemical sensing elements, elements sensing ionic changes, elements sensing enzyme activity changes, elements sensing blood flow changes, elements sensing hormonal changes, elements sensing pH changes, elements sensing changes in osmololity or osmolarity, elements sensing cellular function changes, elements sensing optical changes, and combinations thereof.

6. The method according to claim 1, further comprising surgically implanting one or more sensor elements capable of detecting and conveying signals from a non-central nervous system organ, thereby detecting abnormal organ cell activity, wherein treatment of the abnormal organ cell activity is effected by at least one treatment device selected from the group consisting of a heat transfer device, an electrical stimulation device, a magnetic stimulation device and a medication delivery device.

7. The method according to claim 6, wherein the non-central nervous system organ

is a member selected from the group consisting of peripheral nerves, muscles, neck organs, thoracic organs, abdominal organs, pelvic organs and extremities.

8. The method according to claim 6, wherein the treatment is regional or local to the organ, tissue, or cells.

9. The method according to claim 6 further comprising analyzing organ tissue or cell activity using a computer algorithm and correlating the activity with previous treatment.

10. The method according to claim 1, wherein the medical disorder is a member selected from the group consisting of seizures, headaches, pain, trauma, hemorrhage, encephalitis, localized myelitis, mass lesions, psychiatric disorders, swelling and inflammation.

11. The method according to claim 1, wherein the organ, tissue or cells responsible for the medical disorder are present in a member selected from the group consisting of a central nervous system tissue, muscle, bones, cartilage, connective tissues, and skin.

12. The method according to claim 1, wherein the one or more pulses have a morphology selected from the group consisting of negative phase first, positive phase first, symmetric pulse, asymmetric pulse, pulse of limited duration, pulse with waveform controlled by dynamic feedback, pulse waveform occurring in random order, pulse waveform occurring with random morphology, pulse

waveform occurring with variable morphology, and morphology respective of total duration of pulse train.

13. The method according to claim 1, wherein the at least one treatment device is implanted in a body part selected from a group consisting of the chest, the abdomen, a subcutaneous pocket, the skin and a subclavicular pocket.

14. The method according to claim 1, wherein at least part of said at least one treatment device or said at least one sensor element is located external to a patient's body.

15. The method according to claim 1, wherein the mathematical analysis, including wavelet-crosscorrelation analysis produces wavelet–correlation coefficients and time lag information among sensor elements to determine timing of the treatment.

16. The method according to claim 1 wherein sensor elements measure signals selected from the group consisting of EEG changes, ionic changes, blood flow changes, enzyme activity changes, hormonal changes, pH changes, osmolality changes and osmolarity changes.

17. The method according to claim 1, wherein the medication is a member selected from the group consisting of drugs, electrolytes, and fluids.

18. The method according to claim 17, wherein the drugs are selected from the group consisting of nucleic acids, hormones, hydantoins, deoxybarbiturates,

benzodiazepines, glutamate receptor agonists, glutamate receptor antagonists, γ-aminobutyric acid receptor agonists, γ-aminobutyric acid receptor antagonists, dopamine receptor agonists, dopamine receptor antagonists, drugs affecting NMDA receptors, drugs affecting AMPA receptors, drugs affecting metabotropic receptors, anesthetics and electrolytes.

19. A method of treating a brain disorder by electrical stimulation comprising:

surgically implanting into a patient one or more electrical sensor elements capable of detecting and conveying signals from brain cells;

surgically implanting an electrical stimulator control unit into a body cavity of said patient such that a micro controller of the electrical stimulator control unit is connected to the one or more electrical sensor elements in contact with brain cells; and

connecting the electrical stimulator control unit to one or more stimulating electrodes via a lead bundle, the stimulating electrodes being capable of delivering to brain cells one or more symmetric or asymmetric current pulses;

whereby responsive to signals from the one or more electrical sensor elements, mathematical algorithms of the micro controller perform one or more mathematical analyses including quantication of waveform amplitude, slope, curvature, rhythmicity, time-lag, or frequency as well as analyses based on wavelets such as wavelet cross-correlation analysis of brain cell signals so as to predict onset of seizure activity, thereby causing a stimulating switch to prompt stimulating electrodes to deliver the one or more symmetric or asymmetric current pulses to the brain, thereby halting abnormal brain cell activity in the patient.

20. The method according to claim 19, wherein a train or sequence of asymmetric biphasic pulses is delivered to brain cells in reversed, random or alternating order to halt abnormal brain cell activity in the patient.

21. The method according to claim 20, wherein the train or sequence of asymmetric biphasic pulses comprises an active pulse followed by a recovery pulse.

22. The method according to claim 20, wherein the train or sequence of asymmetric biphasic pulses comprises a recovery pulse followed by an active pulse.

23. A method according to claim 20 wherein the train or sequence of asymmetric biphasic pulses comprises an alternating order of pulses such that a recovery pulse is followed by an active pulse, and thereafter an active pulse is followed by recovery pulse.

24. The method according to claim 20, wherein polarity of an initial pulse is determined by an algorithm.

25. The method according to claim 19 further comprising maintaining charge balance of a current pulse sequence by dynamic feedback.

26. The method according to claim 19, wherein said electrical stimulator control unit is implanted in a body cavity.

27. The method according to claim 26 wherein the body cavity is selected from the

group consisting of the chest, the abdomen, a subcutaneous pocket and a subclavicular pocket.

28. The method according to claim 19, wherein said brain disorder comprises a member selected from the group consisting of epilepsy, intractable pain, psychiatric disorders and movement disorders.

29. The method according to claim 19 further comprising administration of medication systemically or directly into the brain.

30. The method according to claim 29, wherein the medication is selected from the group consisting of nucleic acids, hormones, hydantoins, deoxybarbiturates, benzodiazepines, glutamate receptor agonists, glutamate receptor antagonists, γ-aminobutyric acid receptor agoinsts, γ-aminobutyric acid receptor antagonists, dopamine receptor agonists, dopamine receptor antagonists, drugs affecting NMDA receptors, drugs affecting AMPA receptors, drugs affecting metabotropic receptors, anesthetics and electrolytes.

31. The method according to claim 19 further comprising notifying a patient of abnormal brain activity via a notification signal selected from the group consisting of sound, a visual signal, vibration, an infrared signal, a telemetered signal to an external device and a signal to a wireless or internet device.

32. A device for treating a medical disorder comprising:

at least one sensor element capable of detecting and conveying cell signals;

a management unit positioned such that a micro controller of the management unit connects to the at least one sensor element;

an electrical stimulation device connected to the management unit via a lead bundle such that a stimulation switch sends one or more current pulses to the electrical stimulation device; and optionally

at least one other treatment device,

whereby responsive to signals from said at least one sensor element, mathematical algorithms of the management unit perform analyses including wavelet-crosscorrelation analysis to prompt delivery of one or more current pulses and optionally at least one other treatment to organs tissues or cells responsible for the medical disorder.

33. The device according to claim 33 further comprising means for maintaining charge balance of a current pulse sequence by dynamic feedback.

34. The device according to claim 33 further comprising means of a notification signal, said notification signal being selected from the group consisting of sound, a visual signal, vibration, an infrared signal, a telemetered signal to an external device and a signal to a wireless or internet device.